

Attorney Docket No.: 2002P16679US01

Application No: 10/887,903

Page 3 of 8

IN THE CLAIMS

1. (Original) A method of rationalizing the functioning of a fuel vapor pressure management system that is in fluid communication with a headspace of a fuel system, the fuel system supplying fuel to an internal combustion engine of a vehicle, the method comprising:
 - providing a fuel vapor pressure management apparatus detecting an absence of leaks with respect to the headspace;
 - counting a number of leak detection tests performed by the fuel vapor pressure management apparatus;
 - counting a number of occurrences of the fuel vapor pressure management apparatus detecting an absence of a leak; and
 - evaluating the number of occurrences within a selected number of tests.
2. (Currently Amended) A [[The]] method according to claim 1, wherein of rationalizing the functioning of a fuel vapor pressure management system that is in fluid communication with a headspace of a fuel system, the fuel system supplying fuel to an internal combustion engine of a vehicle, the method comprising:
 - providing a fuel vapor pressure management apparatus detecting an absence of leaks with respect to the headspace, the fuel vapor pressure management apparatus comprises including:
 - a housing defining an interior chamber;
 - a pressure operable device separating the interior chamber into first and second portions, the pressure operable device including a poppet movable along an axis and a seal adapted to cooperatively engage the poppet, a first arrangement of the pressure operable device occurs during the leak detection test when there is a first negative pressure level in the first portion relative to the second portion and the seal is in a first deformed configuration, a second arrangement of the pressure operable device permits a first fluid flow from the second portion to the first portion when the seal is in a second deformed configuration, and a third arrangement of the pressure operable device permits a second fluid flow from the first portion to the second portion when the seal is in an undeformed configuration; and

Attorney Docket No.: 2002P15679US01

Application No: 10/667,903

Page 4 of 8

a sensor detecting the first arrangement of the pressure operable device
during the leak detection test;

counting a number of leak detection tests performed by the fuel vapor pressure
management apparatus;

counting a number of occurrences of the fuel vapor pressure management apparatus
detecting an absence of a leak; and
evaluating the number of occurrences within a selected number of tests.

3. (Currently Amended) A [[The]] method according to claim 1, wherein of
rationalizing the functioning of a fuel vapor pressure management system that is in fluid
communication with a headspace of a fuel system, the fuel system supplying fuel to an internal
combustion engine of a vehicle, the method comprising:
providing a fuel vapor pressure management apparatus detecting an absence of leaks with
respect to the headspace;
counting a number of leak detection tests performed by the fuel vapor pressure
management apparatus;
counting a number of occurrences of the fuel vapor pressure management apparatus
detecting an absence of a leak; and
evaluating the number of occurrences within a selected number of tests, the evaluating
comprises including determining a statistical average of engine operating events when an
absence of the leak occurs.

4. (Original) The method according to claim 3, wherein the deriving the statistical
average comprise empirically measuring a number the occurrences when there is the absence of
the leak.
5. (Original) The method according to claim 3, wherein the evaluating comprises
determining a statistical average of a number of occurrences when there is the absence of the
leak within a selected time period after the engine is turned off.
6. (Original) The method according to claim 5, wherein the selected time period is a
least five minutes.

Attorney Docket No.: 2002P15879US01
Application No: 10/667,903
Page 5 of 8

7. (Original) The method according to claim 6, wherein the selected time period is at least ten minutes.
8. (Original) The method according to claim 5, wherein the time period is selected based on the statistical average exceeding 50 percent.
9. (Original) The method according to claim 1, further comprising:
indicating a malfunction if there are none of the occurrences within the selected number of tests.
10. (Original) The method according to claim 1, wherein the selected number of tests is ten.